

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

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UNITED STATES PATENT AND TRADEMARK OFFICE

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PAT. & T.M. OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROLF WIEDERMANN, STEPHAN WENDEL
and WOLFGANG SCHMITZ

Appeal No. 1998-3149
Application No. 08/362,547

ON BRIEF

Before KIMLIN, WARREN and PAWLIKOWSKI, Administrative Patent Judges.

KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 3-9, all the claims remaining in the present application. Claim 9 is illustrative:

9. A process for the production of rigid foams containing urethane groups and predominately isocyanurate groups comprising reacting:

- 1) polyisocyanates with
- 2) from 30 to 90 parts by weight of compounds containing at least two isocyanate-reactive hydrogen atoms, having molecular weights of from 400 to 10,000, and containing branched chains, in the presence of

- 3) blowing agents consisting essentially of C₁ to C₆ hydrocarbons,
- 4) from 10 to 60 parts by weight of flameproofing agents, and
- 5) from 10 to 20 parts by weight of compounds containing at least two isocyanate-reactive hydrogen atoms and having molecular weights of from 32 to 399 as crosslinking agents,

wherein the parts by weight of components 2), 4) and 5) total 100, and wherein the reaction is conducted at an index range of from 200 to 600.

The examiner relies upon the following reference as evidence of obviousness:

Volkert

5,096,933

Mar. 17, 1992

Appellants' claimed invention is directed to a process for preparing CFC-free rigid foams. The process entails reacting polyisocyanates with branched compounds containing at least two isocyanate-reactive hydrogen atoms, such as polyols, and, inter alia, blowing agents consisting essentially of C₁ to C₆ hydrocarbons, such as cyclopentane. The appealed claims also recite that the reaction is conducted at an index range of from 200 to 600.

Appealed claims 3-9 stand rejected under 35 U.S.C. § 103 as being unpatentable over Volkert.

Appellants submit at page 2 of the principal brief that "[c]laims 3-9 are appealed together." Accordingly, all the appealed claims stand or fall together with claim 9.

We have thoroughly reviewed each of appellants' arguments for patentability, as well as the specification data relied upon

in support thereof. However, we are in complete agreement with the examiner that the claimed subject matter would have been obvious to one of ordinary skill in the art in view of the cited Volkert disclosure. Accordingly, we will sustain the examiner's rejection for essentially those reasons expressed in the Answer.

Volkert, like appellants, discloses a process for preparing rigid foams containing urethane groups and isocyanurate groups which comprises reacting the presently claimed (1) polyisocyanates, (2) higher molecular weight compounds containing at least two isocyanate-reactive hydrogen atoms, e.g., high molecular weight polyols, (3) blowing agents consisting essentially of C₁ to C₆ hydrocarbons, e.g., cyclopentane, (4) flameproofing agents and (5) lower molecular weight polyols that serve as crosslinking agents. Volkert does not specifically disclose that the higher molecular weight polyols, claimed component (2), contain branched chains. However, appellants have not challenged the examiner's finding that branching "is an inherent property of the derived polyols of Volkert since Volkert utilizes similar initiators, such as trimethylolpropane, in the making of their polyether polyols" (page 4 of Answer). Also, although Volkert does not teach any particular index range, and appellants contend that all the examples of Volkert conduct the reaction at an index range lower than the claimed range, appellants have not refuted, let alone addressed, the examiner's reasoning that:

Volkert does set forth ranges of variation and selectivity in choosing the NCO contents for conducting the reactions of their concern, and it would have been obvious for one having ordinary skill in the art to have increased NCO indices in the processes of Volkert for the purpose of increasing the relative amount of isocyanate based material contained in the formed products [page 5 of Answer].

Moreover, we note that it is well settled that where patentability is predicated upon a change in a condition of a prior art composition, such as a change in concentration, NCO index, or the like, the burden is on the applicant to establish with objective evidence that the change is critical, i.e., it leads to a new, unexpected result. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

It is appellants' contention that it is the particular combination of claimed components (2), (4) and (5) in the recited amounts, and conducting the reaction in the claimed index range, that "enables the production of rigid polyisocyanurate foams which are both flame resistant and dimensionally stable" (page 5 of principal brief, lines 2 and 3). Appellants point to the Comparative Examples in the present specification to demonstrate that formulations outside the requirements of the appealed claims do not result in dimensionally stable foams.

In essence, it appears that appellants are maintaining that the claimed method of preparing flame-retardant rigid foams produces unexpected results. However, the burden of establishing unexpected results rests upon appellants, and we agree with the

examiner that the limited specification data falls short of doing so. In particular, we concur with the examiner that the specification data does not provide a comparison with the closest prior art, namely, the examples of Volkert. Volkert discloses that the inventive polyurethane rigid foams have good mechanical properties, and appellants acknowledge that shrinkage of foam effects its dimensional stability, and that "[i]f a foam is not dimensionally stable, it collapses!" (Page 3 of Supplemental Reply Brief, third full paragraph). Consequently, absent evidence to the contrary, it is reasonable to conclude that the polyurethane rigid foams of Volkert are, in fact, dimensionally stable. Also, as explained by the examiner, the specification data fails to establish that the myriad of formulations within the scope of the appealed claims produce dimensionally stable foams. For instance, the appealed claims are not limited to branched polyols for component (2), but embrace all compounds of the recited molecular weight having at least two isocyanate-reactive hydrogen atoms. Also, whereas the appealed claims encompass all flameproofing agents, the specification examples are limited to two flameproofing agents, Disflamoll® DPK and DEEP (diethyl ethyl phosphonate). Likewise, whereas the appealed claims embrace all C₁ to C₆ hydrocarbons, the specification examples are limited to the use of cyclopentane. In addition, claimed component (5) is not limited to low molecular weight

polyols, but includes all compounds containing at least two isocyanate-reactive hydrogen atoms of the recited molecular weight. Consequently, it is our view that the specification data falls far short of being commensurate in scope with the degree of protection sought by the appealed claims. In re Grasselli, 713 F.2d 731, 743, 218 USPQ 769, 778 (Fed. Cir. 1983). Furthermore, appellants have not established on this record that the specification results would be considered truly unexpected by one of ordinary skill in the art. In re Merck & Co., 800 F.2d 1091, 1099, 231 USPQ 375, 381 (Fed. Cir. 1986).


In conclusion, based on the foregoing, the examiner's decision rejecting the appealed claims is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED


EDWARD C. KIMLIN)
Administrative Patent Judge)


CHARLES F. WARREN)
Administrative Patent Judge)


BEVERLY PAWLIKOWSKI)
Administrative Patent Judge)

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